

INCORPORATING TACIT KNOWLEDGE IN PERFORMANCE MEASUREMENT SYSTEM IN A SRI LANKAN HOTEL

Haja Alawdeen Mohamed Aashik*

Department of Building Economics, University of Moratuwa, Sri Lanka

Sepani Senaratne

Western Sydney University, Australia

ABSTRACT

Performance Measurement (PM) has been received an increasing attention over the past 20 years in the hotel industry. It is critical for the development of strategic plans and for evaluating the achievement of organisational objectives. A growing understanding of the limitations of financial measures has led the development of integrated systems and frameworks. Among the conventional models, Balanced Scorecard (BSC) is widely accepted and implemented in organisations. However, identification of Critical Success Factors (CSFs) and formation of BSC model into a practical context is based on several assumptions that could lead to failures. Tacit knowledge addresses the value of the expert's knowledge and specifies techniques to capture current context and changing needs of the organisation. However, the extent of literature on PM has failed to incorporate tacit knowledge into the PM models using any of the externalisation techniques due to several reasons.

Therefore, this study explored the method to incorporate expert's tacit knowledge for PM in the Sri Lankan hotel industry. The research problem was approached through a single case study with an action research phase in a five star hotel that successfully practice Performance Measurement System (PMS) in Sri Lanka. Semi-structured interviews were conducted among the experts in the hotel and combined three methods namely; archival analysis, ethnographic analysis and experts' participation to extract expert's knowledge in to CSFs identification process.

The case study findings revealed that hotel staff subconsciously carries out activities for externalising, preserving and developing their tacit knowledge. However, there is no evidence of considering tacit knowledge in the process of CSFs identification for PM in Sri Lankan hotel industry. Action research phase affirmed, at minimum, either the ethnographic or the interactive method could be used along with archival analysis method to represent both the explicit and tacit knowledge of the organisation to produce an effective PMS. The approach used in this study for incorporating tacit knowledge into performance measurement is adaptable to Sri Lankan hotel industry.

Keywords: *Hotel Industry; Sri Lanka; Critical Success Factors; Performance Measurement; Tacit Knowledge Externalisation.*

1. INTRODUCTION

Kollberg *et al.* (2005, p.98) define that, "performance measurement system is a process of collecting, computing and presenting quantified constructs for the managerial purposes of following-up, monitoring and improving organisational performance". Hence, establishing proper PMS for an organisation is important. In terms of discovering the importance of PM, Kagioglou *et al.* (2001) state identifying and implementing PM has become a vital aspect in order to attract future investment, to increase share value and to attract high quality employees. Further PM enables the managers to make decisions based on facts rather than on assumptions and faith (Parker, 2000). It assists the managers to move towards the correct direction, to revise the business goals and to re-engineer the business process if needed (Kuwaiti and Kay, 2000; Hoek, 1998). With the above outlook, PM could be identified as a vital aspect for a company to

*Corresponding Author: E-mail - everaashik@gmail.com

identify the weaknesses of the organisation, to implement performance and to step forward for new directions. The next section discusses the application of PMS.

2. PMS PRACTICES: GLOBAL HOTEL INDUSTRY

Olve *et al.* (1999) categorise PMS into two groups as where first group adopts historical financial measures from accounting while the second group includes contemporary integrated systems that combine financial with qualitative and non-financial measures. Banker *et al.* (2005) for instance, mention that financial measures are used in the hotel industry because of their ability to reflect the effectiveness of current and former activities. According to Keown *et al.* (2008), one of the best ways to measure financial performance is to use financial ratios or metrics. Such ratios should reflect standardised accounting data in order to allow managers and financial analysts to identify the weaknesses and strengths of a company's performance. These accounting data include the Profit and Loss Account (Income Statement), the Balance Sheet Performance Measurement Systems Statement and the Cash Flow Statement.

However, some authors clearly identify problems and disadvantages of using only financial measures. Ghalayini and Noble (1996) found that such instruments are not related to business strategy and are unable to quantify improvement efforts (e.g. time reduction, customer satisfaction). In addition, Ittner *et al.* (2003) found that financial measures tend to be backward-looking, lack the ability to explain future performance and offer results about functions within the organisation rather than cross functions. Hence, the hotel industry could suffer from the limitations of financial Performance measures and may need to consider integrated PMS. The changes in internal and external environment have led to development of integrated systems and frameworks for measuring performance. The literature on PMS (Otley, 1999; Epstein *et al.*, 2000; Ittner and Larcker, 2001) offers various modern integrated models to measure the performance of the organisations, which generally include Balanced Scorecard (BSC), Business Excellence Model (BEM), Key Performance Indicators (KPI) and Capability Maturity Model (CMM).

Banker *et al.* (2005) explain how integrated PMS could be used in the hotel industry and introduce non-financial performance indicators that measure variables such as seat turnover, average stay per guest and occupancy rate. Also, Denton and White (2000) assert that strategic performance measurements for hotel organizations should be comprehensive enough to consider the disparate goals of owners and management, and factors such as customer and employee satisfaction can be used as potential performance measures. According to Wood *et al.* (1998), a primary success factor of hotel operations is assumed to be related to employee motivation, attitude and performance. Huckstein and Duboff (1999) regard the BSC as the systematic measurement tool that may align owners and managers' goals, assess management's effectiveness in a service operation and adequately measure both financial and non-financial results. Thus, it is clear that the demand for integrated performance measurement systems has grown as they help to capture the contribution of intangible resources to organisational performance in global hotel industry.

2.1. PERFORMANCE MEASUREMENT IN SRI LANKAN HOTELS

De Mel (2002 cited Sunderalingam, 2003) states, in Sri Lanka, PM has become a certainty in public sector organisations and Chartered Institute of Management Accountants (CIMA) has already suggested the use of BSC in public sector organisations. Moreover, workshops have been conducted on BSC performance measurement by Sri Lankan Government and Distance Learning Centre. Taj Hotel is a good evidence of using BSC with the addition of employee satisfaction survey in PM in the Sri Lankan hotel sector (Avkiran, 2002). Further for hotel operations, White Lodging Services (WLS) and Hilton have modified the basic BSC framework for their organizations (Denton and White, 2000; Huckstein and Duboff, 1999). White Lodging Services Corporations is a corporate entity that manages Marriott's limited service franchises comprising Courtyard, Fairfield Inn and Residence Inn. The company started to implement its Balanced Scorecard system both at the corporate and property levels in January 1997. Not only that, the Hilton Colombo became the best hotel in Asia in the Balanced Scorecard category and the BSC of Hilton measures hotel's performance in team member satisfaction, team member training, guest service feedback and Hilton International's Hilton honours loyalty members' feedback (McPhail *et al.*, 2007).

Aforementioned researches reveal that BSC has been successfully applied to the Sri Lankan hotel industry to measure the performance. It further enhanced the application of BSC to the hotel industry and emphasised that BSC is an appropriate evaluation method for service performance. Since, BSC practitioners are available in Sri Lanka and plenty of workshops have been conducted in Sri Lanka promoting performance evaluation tool, more research on PMS using BSC model in Sri Lankan hotel industry will be worth and useful. Hence, next section describes BSC as a PMS, bringing both generic and hotel sector literature.

2.2. FEATURES OF BSC SYSTEM

The balanced scorecard is one of the most influential frameworks for organisational PM (Evans, 2004). Kaplan and Norton (1992) introduced this tool as a PMS comprising a set of different perspectives to provide a comprehensive insight into organisational performance. The BSC measures financial performance in conjunction with performance in relation to customers, performance on learning and growth and finally, the performance of internal business processes. The hotel literature highlights and appreciates the BSC system as a tool to measure the success of the organisation and to offer a road map that can tell managers how a strategic vision can be accomplished. In general, several studies of the hotel industry have found the BSC to be a valuable measurement tool (e.g. Brown and McDonnell, 1995; Hepworth, 1998; Harris and Mongiello, 2001; Phillips and Louvieris, 2005; Evans, 2005; Phillips, 2007). Further, several Authors developed BSC for the hotel industry using several CSFs which is discussed next.

2.3. CRITICAL SUCCESS FACTORS AND PERFORMANCE MEASUREMENT

BSC and critical success factors are intrinsically intertwined. When discussing this relationship, Kellen (2003) argues that at first, appropriate CSFs need to be identified in order to provide focus for performance measurement by using BSC system. Further, Haktanir and Harris (2005) pointed out the noticeable link between CSFs and performance measurement. Therefore, primarily proper CSFs are needed to be identified in order to use BSC model to measure organisational performance. Further, Key performance indicators (KPIs) also used in this model, which represent a particular value or characteristic that is measured to assess whether an organisation's goals are being achieved. Kellen (2003) states that KPIs reflect the CSFs (stakeholder needs and the expectations of the organisation) and KPIs to be effective, the organisation's CSFs need to be specific, measurable, agreed, realistic and time-based (Haktanir and Harris, 2005). Hence, the concept of CSFs in the context of PM and the hotel industry, which are considered necessary for organisational prosperity because of the impact they have on the organisation's potential performance. Several studies (e.g. Louvieris, *et al.*, 2003; Bourne *et al.*, 2003 and Flanagan, 2005) identify CSFs using BSC model to measure the performance of the hotel industry, such as customer focus, staff, quality of service, profitability, budgetary control and customer relationship management. Once these have been identified, it is possible to develop methods of measuring the performance of these factors.

However, despite of high availability of literatures to identify CSFs using BSC model to measure the performance of the hotel industry, they seems to be inconsistent and fail to capture the changing nature of hotel sector over the time. However, one could raise the question that "then how Hilton hotel Colombo became the best hotel in Asia under the BSC category if it is inconsistent in nature?". That was a comparative award rather than absolute award. Actually, Hilton hotel was given the award for BSC practices by comparing other hotels' BSC practices, which does not mean that Hilton hotel's BSC practices are perfect. Because, practically it is extremely complex to identify proper CSFs for BSC model, and to ease this task, BSC is developed with several assumptions that ultimately force to add some limitations over this model and these are discussed in next section.

2.4. LIMITATIONS OF BSC AND CSF

A key assumption in a BSC model is that an organisation's strategy can be articulated and communicated openly throughout the organisation (Akkermans and Oorschot, 2002). It is also assumed that clear knowledge from archival sources represent the overall knowledge of the organisation (Porac *et al.*, 2002;

Rucci *et al.*, 1998). Further, this model fails to demonstrate how CSFs are identified and how the relationships among them are articulated (Rucci *et al.*, 1998; Malina and Selto, 2004).

Overall, although BSC model is widely accepted and implemented in organisations, identification of CSFs and formation of BSC model into a practical context is based on above mentioned assumptions that could lead to failures. The key limitation of BSC model is that it identifies CSFs using archival records and does not capture current context and changing needs (Porac *et al.*, 2002; Rucci *et al.*, 1998). This research argues that CSF should be revised in an organisation from time to time and should include not just the knowledge from archival sources but also the knowledge and experience from the experts within the organisation. To build this argument this research brings insight from Knowledge Management (KM) literature into Performance Measurement (PM) next.

3. KNOWLEDGE RESOURCE IN THE ORGANISATION

According to Blackler (1995), knowledge is a fluid mix of framed experience, values, contextual information and it originates and is applied in the minds of experts. Nonaka and Takeuchi (1991) expressed that knowledge can either be tacit or explicit. Herrgard (2000, p.358) stated, "Organisations' knowledge resources can be described as an iceberg. The structured, explicit knowledge is the visible top of the iceberg, which is easy to find and recognise and therefore easier to share. Beneath the surface, invisible and hard to express, is a momentous part of the iceberg. This hidden part applies to tacit knowledge resources in organisations". Hence, knowledge within an organisation often becomes embedded not only in documents or repositories, but also in organisational routines, processes, practices and norms. In order to explore how this tacit knowledge could be externalised, it is important to understand the nature of tacit knowledge.

3.1. TACIT KNOWLEDGE AND ITS EXTERNALISATION

Polanyi (1966) described tacit knowledge as knowing more than we can tell or knowing how to do something without thinking about it, like riding a bicycle. According to Sigala and Chalkiti (2007), tacit knowledge is mainly in two categories namely; cognitive knowledge and technical knowledge. Cognitive knowledge comprises of beliefs, perceptions, ideals, values, emotions and mental models that are so ingrained in experts, which they are taken for granted. While technical knowledge encompasses the kind of informal and skills often captured in the term know-how and highly subjective and personal insights, intuitions, hunches and inspirations derived from bodily experience fall into this dimension. Externalisation is the translation of tacit knowledge to explicit knowledge. A process of externalisation includes conceptualisation, elicitation and ultimately articulation thus that a portion of a person's tacit knowledge may be captured in explicit form. Externalisation (tacit to explicit) requires knowledge codification and abstraction and it can happen via interactions such as brainstorming and experts' interviews and activities (e.g. by reflecting on lessons learnt from a project).

Senaratne and Sexton (2008) argue that certain tacit knowledge could be useful and deliver competition edge if externalised. Because when the person who possesses tacit knowledge leaves, the firm will lose its knowledge capital if fails to retain such knowledge within the organisation. The most significant work elaborating the management and measurement of tacit knowledge externalisation processes is the work by Nonaka and Takeuchi (1995). Their model illustrates that tacit knowledge is turned into explicit knowledge and vice versa in the externalisation stage in their SECI (Socialisation, Externalisation, Combination and Internalisation) model.

3.2. TACIT KNOWLEDGE EXTERNALISATION TECHNIQUES

Nonaka and Takeuchi (1995) suggested that tacit knowledge becomes explicit using techniques such as metaphors, analogies, cognitive map, hypothesis or models. One effective method of converting tacit knowledge into explicit knowledge is the use of metaphor. According to Lakoff and Johnson (1980), metaphor is pervasive in everyday life, not just in language but also in thought and action. Metaphors can communicate meaning when no explicit language is available, especially in regard to complex ambiguous experience. Analogy is another method of externalising tacit knowledge that reduces vagueness by

highlighting the commonness of two different things. According to Nonaka (1994), analogy allows the functional operation of new concepts or systems to be explored by reference to things that are already understood. In this sense, an analogy enables to know the future through the present by assuming an intermediate role in bridging the gap between image and logic. Metaphor and analogy are often confused and the association of meanings and metaphor is mostly driven by intuition, and involves images.

A cognitive map is another technique that represents the individual's personal knowledge and own work experience (Bougon *et al.*, 1977). The in-depth questioning allows the knowledge that goes unspoken in the organisation to be "mapped". Cognitive maps visualise such knowledge and communicate the visualisation to individuals, groups or organisations, thus converting tacit knowledge to explicit knowledge (Eden, 1992). Further, several methods are used in the literature to combine cognitive maps to visualise the knowledge of the organisation. Bougon *et al.* (1977) used an average of individual maps, Smith (1992) used participant group discussion and Abernethy *et al.* (2005) used multi method approach to build maps. All these authors created the final map by combining all the maps which generated through their respective methods to ensure all elicited knowledge are retained in the final map (Clarke *et al.*, 2000).

Despite of having several techniques to externalise the tacit knowledge to make it explicit, each technique has its own merits and it is important to use appropriate techniques to externalise tacit knowledge based on the application. However, the extent of literature on performance measurement as described above only captures explicit knowledge of the organisation and fails to capture tacit knowledge into the performance measurement models using any of the externalisation techniques. Therefore, it is argued that incorporating tacit knowledge into CSFs identification process will lead to better performance measurement. However, the question of how to identify the CSFs by externalising tacit knowledge in addition to already available explicit knowledge is the challenge. As a result, this research attempts to address this challenge by exploring the method to incorporate expert's tacit knowledge for PM in the Sri Lankan hotel industry. Because, international hotel chains have been growing and most recently global chains have emerged. Moreover, competition has increased, which require more effective operational and business decision-making activities. This has led Sri Lankan hotels to increase their attention on PM and strategic implementation. In addition, literatures indicate that BSC is practicing in Sri Lankan hotel industry and plenty of award schemes available to determine the best PM practitioners. Hence, this research chooses the hotel industry since awareness of PMS will be immense in this particular industry than any other industry. Consequently, the research question that emerged from the above literature findings is that "how to incorporate tacit knowledge in performance measurement in Sri Lankan five star hotels?"

4. RESEARCH METHOD

Case study approach was selected for this research since emerged research question was centred on existing event where the relevant behaviour cannot be manipulated. However, researcher extended the case study with an action research phase when approaching the final output. Researcher incorporated three methods such as archival analysis, ethnographic analysis and expert's participation to develop causal performance maps to create a change for the organisation. Creating a change while doing a research is termed as 'Action Research'. However, this research not following a pure action research but it has stepped into an initial phase of action research study. As per research question, the unit of analysis or case for this study was "critical success factors". In order to avoid complexities associated with the experts who are employed in five star hotels, a single five star hotel was considered and four experts who involved in building PM system for the hotel were considered.

Selected hotel belongs to internationally well recognised hotel chain where Hotel Group operates approximately five hundred and twenty seven hotels in seventy six countries. Selected hotel is a five star hotel which is considered as a city hotel as well as a business hotel and located in Colombo Sri Lanka. As this hotel operating under the shadow of international chain, PM procedures are immense. Hence, this research selected this hotel as a case and relied on the experts who directly involve in PM related activities in this hotel. The first contact in the field was the Director HR of the hotel. He approved the research project and provided the resources needed to undertake the task. The Director HR also provided

the research team with background information concerning the history and the internal structure of the hotel and provided access to relevant archival data (e.g. Dash Board, budget reports and routine operating statistics). He identified four key experts for the study who directly involve in PM related activities. The experts include the HR Manager, the Director Operations, the Revenue Manager and the Marketing and Business Development Manager. All of the experts are directly involved in formulating PMS for the hotel and have significant roles in resource management in the hotel function.

The goal of above mentioned method is to create one causal performance map for the hotel function. Several methods are used in the literature to combine maps. Bougon *et al.* (1977) used an average of individual maps, Smith (1992) used participant group discussion and Abernethy *et al.* (2005) used multi method approach to build maps. All these authors created the final map by combining all the maps which generated through their respective methods as it ensures all elicited knowledge are retained in the final map (Clarke *et al.*, 2000). In this vein, researcher used few features of these methods and predominantly followed the research work and the approach of Abernethy *et al.* (2005) to develop a new method to extract expert's knowledge in to CSFs identification process.

4.1. ARCHIVAL STUDY

Yin (2003) mentions that the archival records can be used in conjunction with other sources of information in producing investigation. Hence, the current research used this method to collect all the performance measurement related data, which enabled to identify explicit CSFs in a five star hotel. After identifying CSFs, then factors were arranged based on the developed preliminary conceptual model (see Figure 1) to develop a causal performance map.

4.2. ETHNOGRAPHIC ANALYSIS

Interview guideline was used based on a common performance model where inputs are converted into outputs through a transformation process to achieve the objective of this research. Figure 2 illustrates a simple performance model with outcomes classified as either effectiveness or efficiency outcomes.

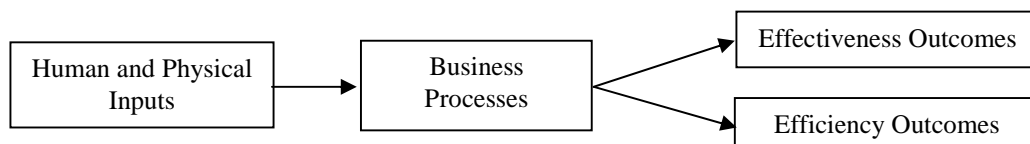


Figure 1: Preliminary Conceptual Model

The model illustrated in Figure 1 was motivated the questions in the interview protocol. Questions were designed to elicit “stories of performance”, because stories are vivid, contextual devices for relating personal knowledge and experience. By telling stories of how the organisation functions and the factors leading to success, participants made explicit what might have remained tacit knowledge about goals, processes, performance and outcomes (Boje, 1991). Based on the interview outcomes, CSFs were identified, and then it was arranged based on the developed preliminary conceptual model to develop a causal performance map.

4.3. EXPERTS' PARTICIPATION

The third map-building method used the participants to map causal relations among CSFs. Thus, researcher met with the participants individually for a second time, and undertook the following steps to extract the experts' knowledge for the links between the CSFs:

provided each participant with a set of cards indicating CSFs which were developed from the transcripts of their prior interviews,

explained that these represented CSFs or activities based on their comments in the prior interview, carefully defined each factor by using specific comments and examples from their prior interview, established mutual understanding that the specific comments reflected the particular CSFs, and

requested their input on how these factors were inter-related (e.g., “look at these factors or activities, see how they fit together, whether there are relationships among them and position them in time sequence, is there something that you do at one point in time that influence other factors later”).

Each participant positioned the cards on a piece of paper and placed or drew arrows between them as appropriate to reflect their causal knowledge. At the same time, note was taken down for the accompanying discussion to capture the rationale behind the relations discussed. Participants were able to revise their positioning of the labels and causal arrows as often as they wished during the interviews. Researcher made no attempt to finalise any map until the participants were satisfied and declared it finished and a good representation of the relationships among the CSFs.

4.4. DATA ANALYSIS

Study used the three complementary methods to analyse qualitative data collected from the interviews in order to create causal performance maps to explore the method to incorporate tacit knowledge into performance measurement in the hotel. All three methods started with performance stories collected in the first round of interviews. The first method relied on the archival analysis of the collected performance measurement related data. The second method reflected the traditional, ethnographic interpretation of first interviews and interview context. The third method used the experts themselves to visually build causal performance maps with cards containing CSFs that had been extracted from their interview transcripts. In the first and second methods, researcher used the data to develop the causal performance map. In the third method, experts were involved in building and validating their own maps. Then, as shown in Figure 2, all three methods were combined to create a final causal performance map to represent the overall knowledge of the organisation. This approach insured that all obtained CSFs and linkages are retained in the final map, which enabled to demonstrate the influence of tacit knowledge towards building of performance measurement system. Hence, Content analysis was used to achieve the final outcome of the research.

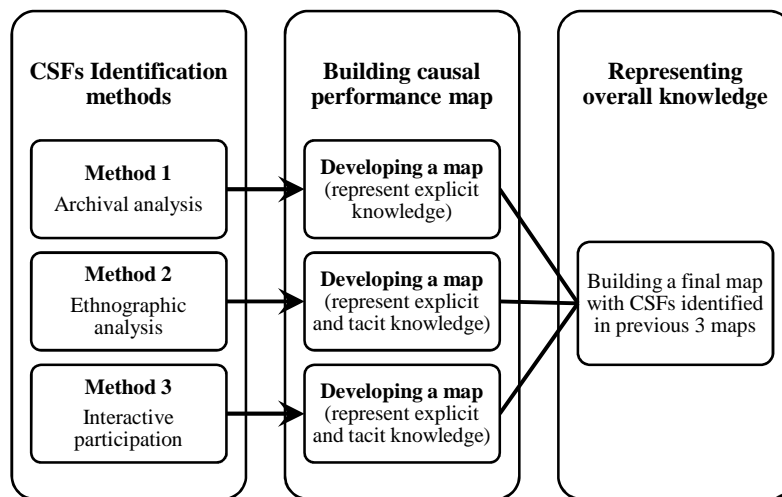


Figure 2: Process of Case Study with a Phase of Action Research Approach

As a data reduction method, code-based content analysis was used in this study to capture important concepts from the transcripts and for effective interpretation. This study selected the software program NVivo 7 for coding function to simplify the works relating to content analysis. Cognitive mapping, which is a network technique, was selected for data displaying process within this study. Cognitive maps visualise knowledge and communicate the visualisation to individuals, groups or organisations that helps to convert tacit knowledge to explicit knowledge (Eden, 1992). One type of cognitive map that captures judgments about the link between actions and outcomes is a causal map. Building a causal map is a means of converting individuals’ tacit knowledge to a model of explicit CSFs and their interrelations. In causal maps, the nodes are the constructs that the individual feels important and the arrows show the relations among the constructs (Atkinson and Bowman, 2001). A causal performance map can be viewed as a cognitive map of organisational success. CSFs and arrows represent the links among inputs, processes

and valued outcomes. In this manner, cognitive mapping provided data to support the development of a PM system for the fulfilment of this research. By tapping the knowledge of individuals within an organisation, a causal performance map described the CSFs and relations among them. This map made possible to define measures that are potential candidates for inclusion in a PMS system.

5. RESEARCH FINDINGS

Method 1: Archival Analysis

The first causal performance map derived in this study results from the currently identified and practicing CSFs in the selected five star hotel. Currently identified and practicing CSFs in the hotel represent the explicit knowledge of the organisation (refer Table 1 for CSFs). For the confidentiality, researcher did not include the BSC of the selected hotel and only CSFs are extracted in this research with the permission of the hotel management. Each observed linkage was evaluated by reading the relevant transcript sections to subjectively assess whether the observed linkage is coherent or spurious. Only those links with at least seven logical links are retained in the map (refer Figure 3).

Table 1: Critical Success Factors of the Hotel

Communication	Recruitment	Performance Reviews
Department Status	Retention	Networking
Department-level Financial Outcomes	Teamwork	Process Constraints
People and Technology Constraints	Training	Satisfaction
Employee Satisfaction	Empowerment	Leadership

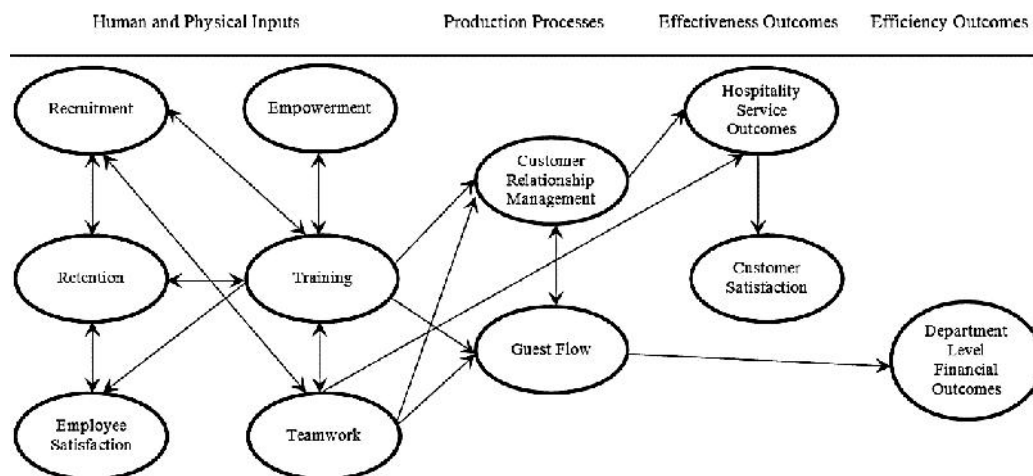


Figure 3: Process of Case Study with a Phase of Action Research Approach

Method 2: Ethnographic Analysis of Interview Data

Figure 4 describes a more complex map that reflects interpretations of the importance of expressed causal linkages beyond the more restrictive method 1. This includes nine additional CSFs such as Leadership, Communication, Performance reviews, Networking, Customer profiling, Service contributions, Staff as drivers of innovation, Department Status and Hotel's financial position. These are recognised in the model where at least one interviewee expressed as important but hotel fails to identify and practice none of these CSFs hence, they were not captured in method 1. Customer profiling is one of the nine additional

CSFs is unique to the map that is included in the production processes category in method 2 but not in methods 1 or 3, which follows. Finally, Figure 4 identifies four additional external factors such as Quality staff unavailability, Downfall in tourism, Location advantages and Market segmentation that are outside the span of control of the hotel function that influence performance.

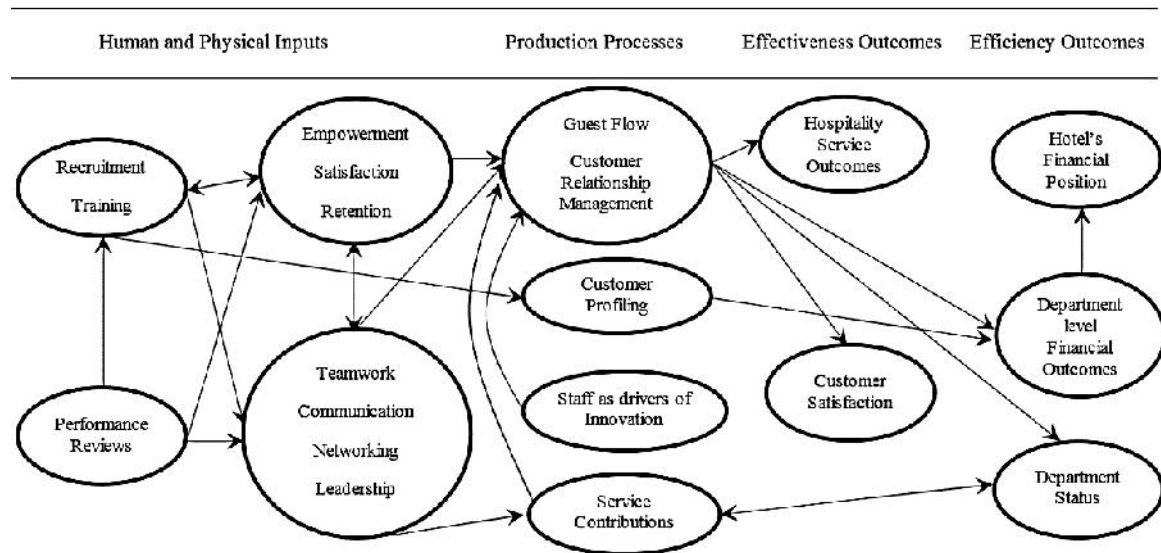


Figure 4: Ethnographic Analysis of Interview Data

Consistent with Figure 3, Figure 4 exhibits relations among CSFs within each category. Also consistent with Figure 3, human and physical inputs affect production processes and effectiveness outcomes while production processes affect effectiveness and efficiency outcomes. Unique to this causal performance map is the bilateral relation between production processes and efficiency outcomes. The causal performance map generated using ethnographic analysis of interview data is consistent with the map generated by archival analysis method. Additional CSFs were identified and a recursive relation was found between two categories.

Method 3: Interactive Mapping by the Experts

The overlaid individuals' map into one causal performance map is shown in Figure 5. As in Figure 4; Figure 5 represents the most general inclusion of CSFs and relations obtained from participants. In addition, individual map expressed in participants' own terms were combined into one common map when definitions clearly matched. The level of complexity of Figure 5 undoubtedly reflects the number of cards provided to the participants. Participants were provided with a set of cards (18 on average) reflecting the most commonly cited CSFs in their own initial interviews. This purposeful research design judgment makes the task descriptive but also keeps the cognitive complexity of the task within reasonable limits, although the maximum feasible number of cards for the task was not apparent. Participants were free to create additional CSFs cards beyond those provided by the researcher and three participants each added only one. Participants appeared to be comfortable working with the cards provided; whether they could have worked effectively with more cards is unknown. Figure 5 adds several important features to the previous maps. One CSF that is unique to this map is Occupancy rates. Even though it was not mentioned during the first round interviews, participants created this CSF during the map building process. Two additional bi-lateral causal relations were added in this map. When building the map, participants noted recursive relations between human and physical inputs and production processes and between human and physical inputs and efficiency outcomes. Participating in Service contribution programs affects employee training, communication and peer reviews while efficiency outcomes affect the department's ability to recruit employees. Figure 5 introduces a feedback loop from outcomes back to inputs which demonstrates that result of the efficiency outcome feeds to human and physical inputs to maximise the efficiency of the organisation and it becomes a continues process.

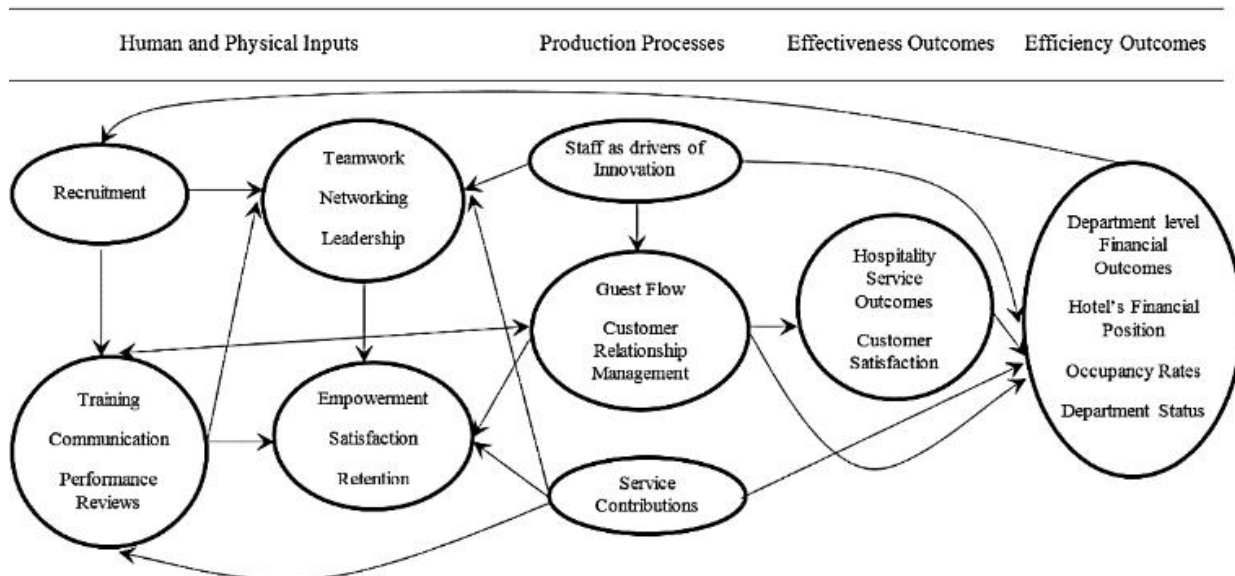


Figure 5: Interactive Mapping by Participants

5.1. INCORPORATING TACIT KNOWLEDGE INTO CSFs IDENTIFICATION PROCESS BY COMBINING THREE METHODS

Once again, the most general combined map is created, effectively layering Figures 4 and 5 upon Figure 3. Figure 6 displays this combined casual performance map, which reflects the full set of counted, contingent and elicited CSFs and their relations (Clarke and Mackaness, 2001). The causal maps; archival, ethnographic, or participant interaction are complementary. The archival analysis method created a map of causal links defined in the hotel BSC model and it reflects the explicit knowledge of the hotel. This map served as an objective core. The ethnographic approach expanded the map to include more CSFs and recursive causal relations. The participant interaction method again added a new CSF and two additional recursive causal relations. While this is not the same as cross validation from independent data, the combined method uses three assessments of the causal relations reflected in the data. This method results in a more inclusive extraction and articulation of the causal linkages implicit in the participants' initial causal performance maps than any single approach. Combined method enhances the possible descriptive validity of the map in Figure 6. This complex causal performance model reflects the complicated nature of the hotel function studied here, which (like most business units) is a complex entity. Figure 6 has clearly shown the impact that tacit knowledge made to this CSFs identification process. Hotel managed to identify only 11 CSFs and 2 external factors with its explicit knowledge but after the influences of tacit knowledge, the research managed to identify 21 CSFs and 6 external factors.

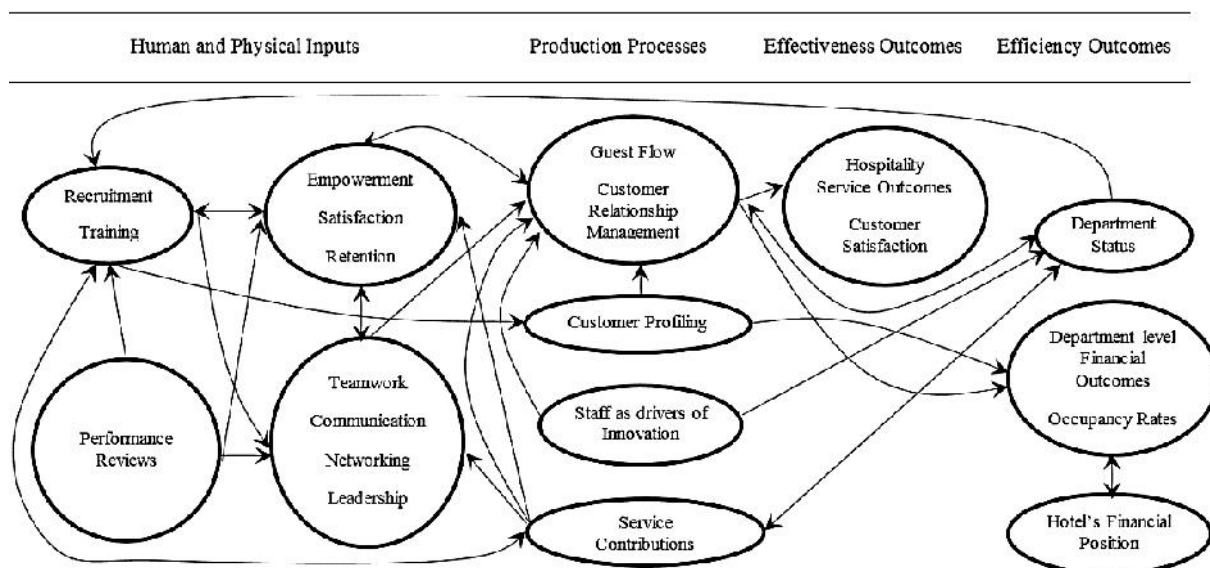


Figure 6: Triangulated Causal Performance Map

However, one may raise the question that “by identifying more CSFs, will it lead to better performance measurement?” Actually, these 21 CSFs were identified based on the causal relationship where each factor contributes towards achieving the primary objective of the organisation. For example, Training is one of the CSF that identified by the hotel however it fails to identify the employee performance review factor which is a vital CSF to determine whether particular employee require training or not and it contributes to check the effectiveness of training as well. Fortunately, with the inclusion of experts’ tacit knowledge, employee performance review factor is identified in Figure 6. Similarly, 21 CSFs identified in the final map carries value reasons for the selection and it will certainly lead to better PM.

6. CONCLUSIONS

Researcher found out the method to incorporate tacit knowledge in to PM in the hotel industry which was the primary aim of this study. To achieve this, researcher used interviews as a common source of mental data but combined three independent approaches to the analysis of the data to enhance the validity of the causal performance map. With inclusion of tacit knowledge in to PM, 21 CSFs were identified based on the causal relationship where each factor contributes towards achieving the primary objective of the organisation. However, explicit knowledge managed to identify only 11 CSFs where some are not frequently practiced by the organisation. Therefore, it could be concluded that it is effective to incorporate tacit knowledge in PM in a Sri Lankan five star hotel and tacit knowledge externalisation techniques such as stories, discussions, metaphors, analogies; etc. could be used during data collection process and cognitive map could be used to represent the tacit knowledge of the experts. To ensure an effective PMS, perhaps, at minimum, either the ethnographic or the interactive method could be used along with archival analysis method to represent both the explicit and tacit knowledge of the organisation. Therefore, it is important to develop guidelines to facilitate how tacit and explicit knowledge can be practically used to develop PMS and enhance the overall performance of the hotel industry. The approach used in this study for incorporating tacit knowledge into PM is adaptable to Sri Lankan hotel industry. It is also noted that the findings in this study was consistent with the findings of Abernethy *et al.* (2005).

However, there are several potential limitations to the study. Researcher used limited numbers of experts to develop the causal performance map to incorporate expert’s tacit knowledge for identifying CSF for PM in the Sri Lankan hotel industry. It is thus possible that the map is not truly representative of the hotel function (or similar programs) but only reflects the views of the respondents selected. The model is built on qualitative data and may thus be subject to both interviewee and interviewer bias. Researcher attempted to address these data limitations by adopting three alternative methods to extract the causal model. Data also collected until the fulfilment of the research and the “stories” from set of experts were consistent. The developed causal performance map might not be generalisable outside the hotel function. However, the prime objective of the research study was not to develop a generalisable map but rather to identify the method to incorporate tacit knowledge in performance measurement in Sri Lankan hotel industry to prove the effectiveness of knowledge externalisation in developing PMS. Furthermore, all such maps are idiosyncratic to specific settings. It is possible, however, that the basic elements of the causal performance map are generalisable across hotel programs.

Further research can be directed towards assessing if this is the case. This would enable the development of a more general “hospitality” causal performance map for use in multiple programs within the hotel industry. The outcome of such research has the potential to make a significant contribution to the management of the hospitality services. Three steps are required to develop such system. First, it is necessary to identify suitable measures (KPIs) for each CSF in the causal performance map, thereby converting the causal performance map into a performance measurement system. Second, the statistical significance of the CSFs needs to be established. This will enable an identification of the most critical performance drivers among the array of CSFs. Third, top management needs to assess the costs and potential accuracy of on-going measurement of these CSFs. While there are costs associated with the design and implementation of a performance measurement system based on causal performance mapping, the process in itself ensures that the tacit knowledge impacted in core operating units is converted to explicit organisational knowledge. This is an important way the organisation can build its organisational capabilities.

7. REFERENCES

- Abernethy, M., Horne, M., Lillis, A., Malina, M. and Selto, F., 2005. A multi-method approach to building causal performance maps from expert knowledge. *Management Accounting Research*, 16 (2), 135-155.
- Akkermans, H. and Oorschot, K. V. 2002. *Developing a balanced scorecard with system dynamics* [online]. Eindhoven University of technology, Department of technology management. Available from: <http://www.systemdynamics.org/conferences/2002/proceed/papers/Akkerma1.pdf> [Accessed 20 Sep 2011].
- Atkinson, H. and Brown, B.J., 2001. Rethinking performance measures: assessing progress in UK hotels. *International Journal of Contemporary Hospitality Management*, 13 (3), 128-135.
- Avkiran, N.K., 2002. Monitoring hotel performance, *Journal of Asia-Pacific Business*, 4 (1), 51-66.
- Banker, R., Potter, G. and Srinivasan, D., 2005. Association of nonfinancial performance measures with the financial performance of a lodging chain. *Cornell Hotel and Restaurant Administration Quarterly*, 46 (4), 394-412.
- Blackler, F., 1995. Knowledge, knowledge work and organizations: an overview and interpretation. *Organization Studies*, 16 (6), 1021-1046.
- Boje, D., 1991. The storytelling organization: a study of story performance in an office-supply firm. *Administrative Science Quarterly*, 36 (1), 106-126.
- Bougon, M., Weick, K. and Binkhorst, D., 1977. Cognitions in organizations: an analysis of the Utrecht jazz orchestra. *Administrative Science Quarterly*, 22 (1), 606-639.
- Bourne, M., Neely, A., Mills, J. and Platts, K., 2003. Implementing performance measurement systems: a literature review. *International Journal of Business Performance Management*, 5 (1), 1-24.
- Brown, J., B. and McDonnell, B., 1995. The balanced score card: short term guest or long term resident?, *International Journal of Contemporary Hospitality Management*, 7 (2/3), 7 - 11
- Clarke, I. and Mackaness, W., 2001. Management intuition: an interpretive account of structure and content of decision schemas using cognitive maps. *Journal of Management Studies*, 38 (2), 147-172.
- Clarke, I., Horita, M. and Mackaness, W., 2000. The spatial knowledge of retail decision makers: capturing and interpreting group insight using a composite cognitive map. *International Review of Retail, Distribution and Consumer Research*, 10 (3), 265-285.
- Denton, G. A., and White, B., 2000. Implementing a balanced-scorecard approach to managing hotel operations. *Cornell hotel and Restaurant Administration Quarterly*, 41(1), 94-107.
- Eden, C., 1992. On the nature of cognitive maps. *Journal of Management Studies*, 29 (3), 261-265.
- Epstein, M., Kumar, P. and Westbrook, R., 2000. The drivers of customer and corporate profitability: modelling, measuring and managing the causal relationships. *Advances Inmanagement Accounting*, 9 (1), 43-72.
- Evans, J. R., 2004. An exploratory study of performance measurement systems and relationships with performance results. *Journal of Operations Management*, 22, 219-232.
- Evans, N., 2005. Assessing the balanced scorecard as management toll for hotels. *International Journal of Hospitality Management*, 17 (5), 376-390.
- Flanagan, C., 2005. *An investigation into the performance measurement practices of Irish hotel groups*. Unpublished Thesis (M.Sc.). Dublin institute of technology.
- Ghalayini, A. and Noble, J., 1996. The changing basis of the performance measurement. *International Journal of Operations & Production Management*, 16 (8), 63-80.
- Haktanir, M. and Harris, P., 2005. Performance measurement practice in an independent hotel context: a case study approach. *International Journal of Contemporary Hospitality Management*, 17 (1), 39-50.
- Harris, P. and Mongiello, M., 2001. Key performance indicators in European hotel properties: general managers' choices and company profiles. *International Journal of Contemporary Hospitality Management*, 13 (3), 120-128.
- Hepworth, P., 1998. Weighing it up: a literature review for the balanced scorecard. *Journal of Management Development*, 17 (8), 559-563.

- Herrgard, T. H., 2000. Difficulties in the diffusion of tacit knowledge in organizations. *Journal of Intellectual Capital*, 1 (4), 357-365.
- Hoek, R. I. V., 1998. Measuring the unmeasurable – measuring and improving performance in the supply chain. *International Journal of Supply Chain Management*, 3 (4), 187-192.
- Huckestein, D. and Duboff, R., 1999. Hilton Hotels-a comprehensive approach to delivering value for all stakeholders. *Cornell Hotel and Restaurant Administration Quarterly*, 40(4), 28-38.
- Ittner, C. and Larcker, D., 2001. Assessing empirical research in management accounting: A value-based management approach. *Journal of Accounting and Economics*, 1 (32), 349-410.
- Ittner, C. D., Larcker, D. F. and Randall, T., 2003. Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society*, 28 (7-8), 715-741.
- Kagioglou, M., Cooper, R. and Aouad, G., 2001. Performance management in construction: a conceptual framework. *Construction management and economics*, 19 (1), 85-95.
- Kaplan, R. S. and Norton, D. P., 1992. The balanced scorecard- measures that drive performance. *Harvard Business Review*, 70 (1), 71-79.
- Kellen, V., 2003. *Business performance measurement: at the crossroads of strategy, decision-making, learning and information visualisation*. Chicago: DePaul University.
- Keown, A.J., Martin, J., Petty, J.W. and Scott, D.F. 2008. *Foundations of finance: logic and practice of financial management*. 6th ed. Upper Saddle River: Prentice hall- Pearson education international.
- Kollberg, B., Elg, M. and Lindmark, J., 2005. Design and implementation of a performance measurement system in Swedish health care services: a multiple case study of 6 development teams. *Quality Management in Health Care*, 14 (2), 95-111.
- Kuwaiti, M. E. and Kay, J. M., 2000. The role of performance measurement in business process re-engineering, *International Journal of Operations & Production Management*, 20 (12), 1411-1426.
- Lakoff, G. and Johnson, M., 1980. *Metaphors we live by*. Chicago: University of Chicago press.
- Louvrieris, P., Phillips, P., Warr, D. and Bowen, A., 2003. Balanced scorecards for performance measurement in SME's. *The Hospitality Review*, 5 (3), 49-57.
- Malina, M. and Selto, F., 2004. *Causality in Performance Measurement Models*. Boulder: University of Colorado.
- McPhail, R., Herington, C. and Guilding, C., 2008. Human resource managers' perceptions of the applications and merit of the balanced scorecard in hotels. *International Journal of Hospitality Management*, 27(4), pp.623-631.
- Nonaka, I. and Takeuchi, H., 1991. *The knowledge creating company*. New York: Harvard business review.
- Nonaka, I. and Takeuchi, H., 1995. *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford university press.
- Nonaka, I., 1994. A dynamic theory of organizational knowledge creation. *Organization science*, 5 (1), 14-38.
- Olve, N. G., Roy, J. and Wetter, M., 1999. *Performance drivers: a practical guide to using the balanced scorecard*. New York: John Wiley and Sons.
- Otley, D., 1999. Performance management: a framework for management controls systems research. *Management Accounting Research*, 10 (4), 363-382.
- Parker, C. 2000. Performance measurement. *Work Study*, 49 (2), 63-66.
- Phillips, P. and Louvieris, P., 2005. Performance measurement systems in tourism, hospitality, and leisure small medium-sized enterprises: a balanced scorecard perspective. *Journal of Travel Research*, 44 (2), 201-211.
- Phillips, P., 2007. The balanced scorecard and strategic control: a hotel case study analysis. *The Service Industries Journal*, 27 (6), 731-746.
- Polanyi, M., 1966. *The tacit dimension*. Harvard university press: Boston.
- Porac, J., Mishina, Y. and Pollock, T., 2002. Entrepreneurial narratives and the dominant logics of high-growth firms. In: A. Huff and M. Jenkins, eds. *Mapping strategic knowledge*. Thousand Oaks 1 January 2002, CA: Sage Publications, 112-136.

- Rucci, A., Kirn, S. and Quinn, R., 1998. The employee-customer-profit chain at Sears. *Harvard Business Review*, 76 (Jan-Feb), 82-97.
- Senaratne, S. and Sexton, M., 2008. Managing construction project change: a knowledge management perspective. *Construction Management and Economics*, 26, 1303-1311.
- Sigala, M. and Chalkiti, K., 2007. Improving performance through tacit knowledge externalisation and utilization: preliminary findings from Greek hotels. *International Journal of Productivity and Performance Management*, 56 (5-6), 456-483.
- Smith, K. L., 1992. Exploring the need for a shared cognitive map. *Journal of Management Studies*, 29 (3), 349-368.
- Sunderalingam, S., 2003. *Measuring contractors' long-term performance: effective use of a balanced scorecard approach*. Unpublished Dissertation (B.Sc.), University of Moratuwa.
- Woods, R. H., Sciarini, M. and Breiter, D., 1998. Performance appraisals in hotels. *The Cornell Hotel and Restaurant Administration Quarterly*, 39 (2), 25-29.
- Yin, R. K., 2003. *Case study research: design and methods*. 3rd ed. London: Sage publications.